



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1201 ELM STREET, SUITE 500
DALLAS, TEXAS 75270

December 15, 2021

Mr. Earl Lott, Director
Office of Water (MC-158)
Texas Commission on Environmental Quality (TCEQ)
P.O. Box 13087
Austin, TX 78711-3087

Re: Interim Objection – Request for Additional Information
TPDES Permit No. TX0138347 (WQ0005253000)
Port of Corpus Christi (POCC) Authority of Nueces County

Dear Mr. Lott:

Thank you for the submittal of the proposed TPDES permit and supporting documents for the Port of Corpus Christi (POCC) Authority in response to our letter dated September 20, 2021 (Notice of Termination of permit review waiver). We received access via FTP site on October 1, 2021. In addition, we were granted an extension for review that revised the deadline from November 15, 2021 to December 15, 2021. We are also in receipt of your letter dated November 12, 2021, which questions the EPA's authority to terminate permit review waiver for the proposed TPDES permit for POCC. You state in your letter that the EPA had ample time to engage with TCEQ on this permit and did not provide comments during the public comment period. Yet, as you also noted, the POCC proposed permit was not forwarded to the EPA at the draft permit stage for review because this facility was classified by TCEQ as a Minor facility, for which the EPA waived review under the Memorandum of Agreement (MOA) between the EPA and TCEQ. However, as explained in detail in Attachment A, Item A, the EPA has determined that the POCC facility was incorrectly classified as a Minor facility under federal regulations and the Major/Minor worksheet used by the State to classify the facility. Because the facility proposes to discharge process wastewater as defined at 40 C.F.R. 122.2, the EPA has determined that the facility should be classified as a Major facility.¹ The EPA has not waived review of Major facilities. Consequently, this proposed permit should have been forwarded to EPA for review at the draft permit stage as a Major permit in accordance with federal regulations and the MOA.

After being notified of concerns regarding the permit, and of the substantial public interest in this matter, EPA requested an opportunity to review the permit in accordance with our oversight role and responsibility in partnering with our state counterparts to ensure the efficiency of the administration of the NPDES permitting program, and that state-issued permits are consistent with the requirements of the Clean Water Act (CWA) and protective of water quality and aquatic life.

EPA appreciates the time and effort that has gone into the permitting process regarding the POCC permit by both TCEQ and third parties. Nonetheless, as TCEQ noted in its November 12, 2021, letter to EPA, following a hearing before the Commission on May 14, 2021, the Commission remanded POCC's permit application to the State Office of Administrative Law Judges (SOAH) to take additional evidence. Following the remand, POCC submitted a revised application on June 25,

¹ See 40 CFR 122.2 provides "**Major facility** means any NPDES "facility or activity" classified as such by the Regional Administrator, or, in the case of "approved State," the Regional Administrator in conjunction with the State Director."

2021, and additional information on July 28, 2021. Subsequently, based on the revised application, TCEQ prepared a new Statement of Basis and revised permit. It is EPA's understanding that proceedings regarding the revised permit are ongoing before the SOAH and that a contested case hearing before an Administrative Law Judge (ALJ) will not take place before March of 2022. Consequently, EPA does not believe allowing EPA to review the permit following receipt of the requested information and provide comments in any way disrupts or slows down the process.

Our permit review process has benefitted from the open communication and coordination regarding responses and clarification from your staff to our concerns and comments. As a result of our review of the proposed permit, statement of basis, and other supporting documents, we believe additional information is needed to determine whether the proposed permit meets the guidelines and requirements of the Clean Water Act. The EPA offers comments/recommendations as outlined in Attachment A, and requests submittal of additional information and responses as appropriate. This Interim Objection is being issued pursuant to 40 CFR 123.44(d)(2). Consistent with that provision, the full period of time for EPA's review of the proposed permit will recommence when the Regional Administrator has received the information requested in this Interim Objection. Under Section IV.C.3 of the MOA, EPA will have 30 days to make a general objection to the proposed permit. If EPA makes a general objection, it reserves the right to take 90 days to supply any specific objections, as specified in 40 CFR 123.44(a)(1). However, EPA will make every effort to convey any objections in an expedited manner given the status of the permit.

In addition, EPA requests that its comments on the proposed permit be included in the record before the ALJ in this proceeding and that the ALJ's revised Proposal for Decision be forwarded to EPA for review 30 days prior to the record being closed, in accordance with Section IV.F. of the MOA.² EPA also requests that the resulting proposed permit from the contested case hearing proceedings be forwarded to EPA for review in accordance with Section IV.C.3 of the MOA based on the fact that there has been significant public comment with regard to the proposed permit.

We appreciate your attention and cooperation during this permit review process, and look forward to your responses and input. Feel free to contact me at (214) 665-8138, if you have any questions or have your staff contact Mark Hayes at (214) 665-2705, or EMAIL:hayes.mark@epa.gov.

Sincerely yours,

Charles Maguire

Charles W. Maguire
Director
Water Division (WD)

Enclosures

² Section IV.F of the MOA provides that "EPA shall have thirty (30) days to comment on a revised PFD or permit before the record is closed on a proposed permit which contains provisions which differ from the draft or proposed permit reviewed by EPA, as specified in Section IV.C.3. of this MOA, relating to re-reviews. EPA may object in accordance with the grounds and procedures set out in Section IV.C.3 of this MOA. TCEQ staff will transmit to the Commissioners and place into the record of the contested case hearing, if any, all EPA comments and objections on a proposed permit prior to their decision."

cc (electronic): Robert Sadlier, Deputy Director
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TCEQ

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ATTACHMENT A

COMMENTS/RECOMMENDATIONS

A. Definition of Process wastewater and Incorrect Rating of the facility as a Minor based on the TPDES Permit Major/Minor Rating Worksheet:

TCEQ classified this facility as a Minor facility based on TPDES Permit Major/Minor Rating Worksheets dated August 2018 and revised July 2019, in large part because "the discharge is recorded on the Worksheets as non-process wastewater. EPA has determined that this is incorrect. POCC is proposing to discharge the waste product resulting from the production of potable/drinking water, i.e., wastewater generated by a reverse osmosis process that contains high concentrations of salt and other impurities relative to the seawater feedstock, and supernatant from solids/sludge thickening and rewatering. EPA has determined that this meets the definition of process wastewater at 40 C.F.R 401.11(q). That section defines process wastewater as "any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, by-product, or waste product."

Pursuant to 40 CFR 122.2, the decision to classify a facility as a Major is to be made by "the Regional Administrator, or, in the case of "approved State programs," the Regional Administrator in conjunction with the State Director." If POCC's discharge is properly classified as process wastewater on TPDES Permit Major/Minor Rating Worksheet, the rating of the facility changes from Minor to Major.³ EPA therefore requests the classification of the facility be changed from Minor to Major.

In addition, EPA requests that going forward desalination facilities in general be classified as Major facilities due to the facilities' discharge of process wastewater.

B. CWA Section 316(b) Rule and requirements:

A clarification request was submitted by EPA (email dated October 27, 2021) regarding the facility's operation in accordance with the requirements of the CWA Section 316(b) rule for new facilities. EPA's understanding from conversations with TCEQ staff is that the POCC does not use and/or proposes to use water for cooling purposes (this was also documented in the permit application submitted March 2018 and 2021). Thus, it appears the POCC facility is not subject to 316(b) requirements. It was also noted that POCC plans to locate the intake structure in the Gulf of Mexico (GOM) that will be covered under a water rights permit. We would suggest establishing an additional provision in OTHER REQUIREMENTS section

³ EPA has provided guidance on rating non-municipal facilities as either major or minor. (<https://www3.epa.gov/npdes/pubs/owm0116.pdf>). A discharge that contains only process wastewater is classified as a Type II discharge (see page 3 of the NPDES Permit Rating Work Sheet). The Type classification (Type I, II and III) for a discharge influences the score in the NPDES Permit Rating Work Sheet.

of the permit that reiterates the requirement cited in Permit Conditions nos. 1 and 4, that requires the permittee to notify the TCEQ of any modifications and/or alterations within the facility. For this proposed permit, we suggest the requirement for the POCC to notify the TCEQ of any modifications to the use of water withdrawals from the intake structure.

C. CORMIX Model Results:

Below are our comments (dated December 6, 2021) submitted to you via email (on December 6, 2021) as a result of our review of the CORMIX modeling documented in the TCEQ's Interoffice Memo dated August 2021 and the analysis entitled, "Mixing Analysis for the Port of Corpus Christi Authority of Nueces County." We note that the CORMIX model was used to characterize the effluent discharge via a diffuser for the calculations of water quality limits and the reasonable potential (RP) analysis. We are resubmitting them to you to include these comments along with your responses (dated December 8, 2021) in this Interim Objection Letter for required follow-up as needed and for completeness of record.

EPA December 6, 2021 Comment 1:

The memo states that "if the effluent flowrate decreases by more than 10%, the diffuser ports can be blocked, or smaller diameter ports can be used to maintain the same port exit velocity" and that when the port velocity is maintained, the diffuser can achieve the same effluent dilutions at lower effluent flow rates. This would be true if two conditions exist: 1) The ports are (and will remain) close enough together that the jets from each port merge within a short distance after discharge, and 2) the overall length of the diffuser is unchanged. It would be easier to maintain those conditions if the ports are shrunk, rather than blocked. So, if it's likely that the flow rate will decrease from the current proposal, is it possible to clarify their plans for modifying the diffuser to account for that? That said, the scenarios for 50% recovery did use a lower flow rate (83.1 mgd instead of 95.6 mgd) and that didn't reduce the dilution achieved. If the plan is to block ports on the end(s) of the diffuser (so that the port size and spacing can remain the same), then it would be a recommended that some additional scenarios be run reflecting the shortened diffuser length, just to verify that dilution isn't reduced.

TCEQ December 8, 2021 Response 1:

For new discharge applications where a diffuser is proposed, the TCEQ guidance document Mixing Analyses Using CORMIX specifies that the proposed permitted flowrate should be evaluated. The proposed permit authorizes one flow phase (95.6 MGD), which is the proposed flowrate associated with the facility operating at a 40% recovery rate. Additional cases were modeled using an effluent flowrate of 83.1 MGD because this is the proposed effluent flowrate when the facility operates at a 50% recovery rate. The same diffuser design was evaluated for both effluent flowrates, and no other diffuser design was submitted with the application.

Once the facility begins discharging, the permittee will be required to maintain the diffuser such that a maximum effluent percentage of 14.6% be achieved regardless of the actual effluent flowrate. This requirement is defined in the proposed permit under Other Requirement No. 4. Failure to operate the diffuser such that 14.6% effluent or less is achieved at the edge of the ZID would be a violation of this permit requirement.

Additionally, Permit Conditions Nos. 1 and 4 require the permittee to notify the Executive Director of relevant information related to a permit application or if any planned physical alterations or additions will be made to the permitted facility. Therefore, if the diffuser design is amended, the permittee is required to submit the relevant information to the Executive Director. At that time, the Executive Director will review the information and determine if a permit amendment is needed.

EPA December 6, 2021 Comment 2:

Also, the August 10, 2021 memo states on Page 8 that, because the receiving water is tidal, and because the mixing zones are centered on the diffuser barrel, the analyst evaluated the location at which the plume centerline intersects the regulatory mixing zones at one-half the downstream distance in the x-direction. This appears to be fine, however, it may not be "conservative," as stated in modeling documentation. This assumption adequately accounts for the fact that the ambient velocity is tidal and that the mixing zone is centered on the diffuser, so the plume would only need to travel half the total size of the mixing zone before it reaches the boundary. However, it doesn't take into account any re-entrainment or buildup that may occur due to the reversing flows. The CORMIX model does have some capability to model "unsteady" ambient environments, as described in Section 4.4.3 of the user manual.

TCEQ December 8, 2021 Response 2:

The location at which the plume intersects the mixing zone boundaries was described as "conservative" in the 8/10/2021 memo compared to the location the applicant used to assess where the plume intersects the mixing zone boundaries. Specifically, the applicant used the full downstream distance in the x-direction whereas I used one-half the downstream distance. Because the plume becomes more diluted the farther it travels from the diffuser ports, by assessing the model predictions at one-half the downstream distance, the centerline of the plume is more concentrated at this location than at the full downstream distance. Thus, the locations at which the model predictions were assessed are conservative compared to how they were assessed by the applicant.

The basic CORMIX methodology relies on an assumption of steady-state ambient conditions because the time scale for mixing processes is typically on the order of minutes up to approximately one hour. The TCEQ guidance document for reviewing diffusers does not address unsteady ambient flow conditions (i.e., tidal reversing) since tidal reversing is a phenomenon that typically occurs twice per day following each slack tide and represents conditions that only occur for a few minutes each day. Therefore, predictions of effluent concentrations are more representative under steady state ambient conditions rather than at unsteady ambient conditions which occur infrequently and for a short duration. Additionally, using the unsteady tidal velocity option for this permit application would be inconsistent with how the TCEQ reviews other diffuser discharges into tidal water bodies.

D. Permit Conditions for Total Dissolved Solids (TDS), Sulfates, and Chlorides:

The proposed permit establishes reporting and monitoring requirements for parameters TDS, sulfates, and chlorides. It is cited in the statement of basis that there's no national effluent

limitation guidelines for this type of operation and therefore, reporting and monitoring requirements were based on best professional judgement (BPJ). It was also stated that there are no numeric water quality criteria for TDS, sulfates, and chlorides for this waterbody segment, and that “ the applicant performed extensive analyses and modeling to conclude . . . the discharge would not impact salinity gradients in the surrounding waters and that survival, growth, and reproduction of aquatic life would not be significantly impacted . . .” We request additional information and rationale on how based on BPJ, reporting and monitoring requirements were established (i.e., requirements and conditions of similar permitted operations and waste streams).

E. Tier 2 Antidegradation Review:

The statement of basis documents that “A Tier 2 review has preliminary determined that no significant degradation of water quality is expected in Corpus Christi Bay . . .” In response to the TCEQ Executive Director’s request for clarification and the Interim Order of May 26, 2021, POCC submitted additional updated information (relocation of the outfall and design of the diffuser) for a revised Tier 2 Antidegradation review. However, the TCEQ should include in the statement of basis, the acknowledgement of this additional information provided by the POCC and confirm and/or address how this complies with the TCEQ’s Tier 2 antidegradation review policy.

F. Whole Effluent Toxicity

Whole Effluent Toxicity (WET) requirements were revised from the first version of the proposed permit. The most current version of the permit includes chronic testing requirements, using approved marine chronic methods with the most sensitive vertebrate and invertebrate marine species available. The critical dilution calculated is a result of the CORMIX model (see comments above). EPA would like to note that WET testing is a part of EPA’s integrated strategy in the assessment of water quality, which includes the use of three control approaches (the other two being chemical-specific limits and biological criteria). As such, EPA reminds TCEQ that WET is not intended to take the place of any other biological assessment that is appropriate for water quality assessment of this receiving stream.